

U.S. Arctic Security

By

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Abstract:

"Without action, America is putting its national security on the line, and we are going to miss the opportunities of the Arctic while watching other nations advance."
-- Alaskan Lieutenant Governor Mead Treadwell¹

The time to start shaping the U.S. Arctic security interests is now. The Arctic offers both commercial opportunity and security if it is successfully implemented into U.S. national policy objectives and strategy. With 90 billion barrels of oil throughout 400 oil fields, the region is destined to be bustling with exploration in the next ten years. Additionally, global warming trends and shrinking Arctic ice will open waterways and shorten commerce routes between the east and west to create a continuous flow of goods and people through the far north. The time to expand and create new infrastructure consistent with objectives is now. The hazards of waiting too long to fully engage could mean the U.S. loses the opportunity to shape the security, commerce, and environment for the future. It could also mean a much greater investment to achieve its objectives later. Arctic Council policy and governance discussions as well as joint military training exercises are a step in the right direction. The U.S. Coast Guard alone has increased its presence as much as possible within the constraints of limited resources and Joint Task Force Alaska established a command and control center to process information and provide situational awareness for key decision makers. Although these are steps in the right

¹ Statement for the Record The Honorable Mead Treadwell Lieutenant Governor State of Alaska Before the United States House of Representatives Committee Transportation on Transportation and Infrastructure Subcommittee on Coast Guard and Maritime Transportation "America is Missing the Boat" December 1, 2011 Washington, D.C. <http://republicans.transportation.house.gov/Media/file/TestimonyCGMT/2011-12-1-Treadwell.pdf>

direction, more is needed. Involvement from NATO would provide the presence, shared information, joint training, and combined resource acquisition needed to create a stable and secure environment in the ensuing rush. Establishment of U.S. Arctic Command could also be another brick in the foundation of U.S. Arctic security needs. Instead of waiting until the security gap is exploited, like the U.S. did with the establishment of NORTHCOM post 9/11 attacks, lawmakers should take these steps now. The U.S. ratification of the United Nation's Law of the Seas as well as commitment to acquire infrastructure and hardware will guarantee U.S. involvement in Arctic shaping discussions and provide presence to patrol and deter threats as the region develops. The Arctic is a prime opportunity for the U.S. to play a role in shaping one of the last frontiers. It requires vision and perspective to grasp what the future holds in the region, but incontestably U.S. national security will be a major concern.

Introduction:

As the United States prepares for the challenges of the 21st century, it must prioritize focus and resources amongst several competing interests. One such interest, the Arctic, offers both opportunity and security if it is effectively implemented into national policy objectives and decision-making.

The Arctic has come to the forefront of national interests for two main reasons. First, the Arctic waters are warming at an increased rate that has given unprecedented access to the exploration and resources the region has to offer. Over the last ten years, an observation station has reported an 11 degree Fahrenheit increase in winter temperatures. This increase in temperature has shrunk the polar ice cap by 25% since 1978. In addition to the reduction in area, the ice thickness has also reduced up to 40% in recent decades.² Speculation to the summers being sea ice free in the next 30 years supports the Arctic as the fastest warming region on the planet.³ Second, the region contains large reserves of oil and natural gas. In July 2008, the U.S. Geological Survey (USGS) estimated the Arctic contained 30% of the planet's remaining natural gas resources, or 44 billion barrels, and 13% of oil reserves or 90 billion barrels. Of these 400 discovered gas and oil fields, nearly all of them occur offshore in less than 500 meters of water and are now accessible due

² Conley, Heather and Kraut, Jamie, *U.S. Strategic Interests in the Arctic: An Assessment of the Current Challenges and New Opportunities for Cooperation*, CSIS: p. 1

³ Amos, Johnathon, "Arctic summers ice-free 'by 2013,'" BBC News, December 12, 2007, <http://news.bbc.co.uk/2/hi/7139797.stm>

to warming trends. The survey states, "The extensive Arctic continental shelves may constitute the geographically largest unexplored prospective area for petroleum remaining on Earth."⁴ These two main factors combined with increased shipping access to the region, propel the Arctic to center stage in U.S. national policy and decision-making.

This research paper aims to discuss why lack of security policy in the Arctic proposes a threat while exploring what is currently being done and what needs to be done both short and long term. As one of the five Arctic coastal states and a super power, the United States has an excellent opportunity to shape the future of the Arctic with respect to security, environment, commerce, and transportation.

Background:

The United States became one of the Arctic states with the purchase of Alaska from Russia in 1867. Except for a gold rush in 1897, the area stayed in the shadows until air transportation made it relevant due to its location along the Pacific great circle routes. General Billy Mitchell stated to the U.S. Congress in 1935, "I believe that in the future, whoever holds Alaska will hold the world. I think it is the most important strategic place in the world."

The region first saw action during World War II with the Battles of the Aleutian Islands. The Japanese had secured two of the islands they believed could be used as staging bases for an air attack against them. As part of Alaska's sovereign territory and the perceived threat these islands could be used as staging bases for an

⁴ "Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle," USGS Fact Sheet 2008-3049, U.S. Geological Survey, Denver, CO, 2008, <http://pubs.usgs.gov/fs/2008/3049/fs2008-2049.pdf>.

air attack on the west coast, the U.S. engaged in heavy air and sea battles to regain control of these islands.

Although it played a role in World War II, it became an important strategic security interest at the onset of the Cold War. Since intercontinental ballistic missiles and bombers could transit over the North Pole from the Soviet Union, the Arctic became an important node for both the detection and defense of North America. In 1949, a reconnaissance mission flown from Alaska to Japan detected the first Russian test of an atomic bomb that put an end to the U.S. atomic monopoly and marked the start of the Cold War. In the 1950s, a radar system named the Distant Early Warning net was built along the Alaskan and Canadian northern coasts to detect airborne threats inbound to North America. This led to the formation of the North American Aerospace Defense Command (NORAD) in 1958. Over the years, many upgrades to this equipment have been made, satellites have been added, and organizations have changed names, but the mission itself hasn't changed.

Historically shipping routes have drawn merchants towards exploring the Arctic Sea to reduce transit times from Europe to Asia. The Northwest Passage (NWP) tracks along the coast of North America and through the Bering Strait of Alaska while the Northeast Passage (NEP) tracks along the coast of Europe and Asia to the Bering Strait. Until recently, both passages haven't been consistently navigable due to ice flows. However, in 2011, 34 ships with 820,000 tons of cargo made it through the NEP marking an increase from a total of six ships in 2010.⁵ The NWP has also been more navigable in recent years, but also has the challenges of

⁵ Paul Douglas (January 8, 2012). *The Star Tribune*.
<http://www.startribune.com/blogs/136874168.html>

Canadian sovereignty. Much of the route passes through Canadian internal waters within 12 miles of their northern coast. The fuel and time cost savings of these northern routes is considerable. Recently Beluga Shipping made the NEP voyage from Ulsan, Korea to Rotterdam without icebreaking escort. The voyage saved approximately 4000 nautical miles and 300,000 euros over their normal route through the Suez Canal.⁶

Why is it emerging now?

As discussed, temperatures in the Arctic are rising at an exponential rate. The catalyst for the rapid increase is climate change, but is exacerbated by the effects of sunlight on dark water versus historically snow-covered ice. As the water absorbs sunlight it causes a melting effect that is greater than atmospheric warming alone.

In 2007, the Russians planted their flag on the Arctic seafloor in a symbolic gesture to demonstrate capability and notionally lay claim to those mineral rights. The Arctic states were initially outraged and Canadian Foreign Minister Peter MacKay told CTV television "This isn't the 15th century. You can't go around the world and just plant flags and say 'We're claiming this territory'."⁷ Although United Nations Convention on the Law of the Sea (UNCLOS) spells out states are limited to resources within their Exclusive Economic Zones of 200 nautical miles from their coasts, it also stipulates it can extend beyond that if it is part of the state's continental shelf. Identifying where continental shelves start and end is disputable

⁶ <http://www.beluga-group.com/en/#News-News>

⁷ <http://www.cnn.com/2007/WORLD/europe/08/02/arctic.sub.reut/index.html>

and has already led to debates between the U.S. and Canada in the Beaufort Sea and Russia and Norway in the Barents Sea.⁸

In addition to oil and gas, the Arctic region is also rich in fish, timber, and mineral resources. Significant deposits of copper, gold, iron, magnesium, silver, and titanium along with diamonds have been found throughout the region, but have been difficult to commercially extract until recent years. Russia already has 25 mines in the Arctic and produces 20% of the world's nickel and 50% of the palladium from the Norilsk plant.⁹ Additionally, 10 percent of the world's white fish catch already comes from the Arctic Ocean, a number that will skyrocket once the NEP and NWP open continuously.

Lastly, Arctic ecotourism is on the rise and will play a role in the economics of the region. The U.S. Coast Guard reports cruise ships transiting the Bering Strait increased from 245 in 2008 to 325 in 2010.¹⁰ Emergency response to the area is woefully underdeveloped and maritime border disputes have created even more setbacks. In August 2010, the Canadian Coast Guard had to rescue passengers from a cruise ship that ran aground on an uncharted rock. Luckily all passengers were rescued safely, but had the ship began to sink, the response may not have made it in time.

⁸ Conley, Heather and Kraut, Jamie, *U.S. Strategic Interests in the Arctic: An Assessment of the Current Challenges and New Opportunities for Cooperation*, CSIS: p. 1.

⁹ Conley, Heather, Toland, Terry, and Kraut, Jamie, *A New Security Architecture for the Arctic: An America Perspective*, CSIS: p. 5

¹⁰ Conley, Heather, Toland, Terry, and Kraut, Jamie, *A New Security Architecture for the Arctic: An America Perspective*, CSIS: p. 8

Economics associated with resources have brought the Arctic into the limelight. In an energy dependent world, the struggle for these resources could be the recipe for conflict or a long-term threat to U.S. security.

Why it proposes a U.S. security threat

Unlike Canada, Russia, and Norway, the U.S. does not associate its national identity with the Arctic. As discussed earlier, the historical significance of Alaska as a strategic stronghold played a minor role during WWII and major role during the Cold War. However, with the collapse of the Soviet Union the Arctic has essentially fallen off of the U.S. strategic military and foreign policy radar.

In contrast, Canada, Norway, and Russia have made the Arctic a major part of their national security plans and allocated necessary resources. Russia has invested in a fleet of 20 icebreaking ships and an undisclosed number of Arctic-capable submarines. This contrasts to the U.S. with three Coast Guard icebreakers of which only one is operational. Russia has also created tax-free incentives to private companies to extract oil and natural gas and made a \$64 million investment in scientific research with a drifting polar research center. Norway has committed \$214 million towards various Arctic projects for 2012 and Canada has committed an unprecedented \$33 billion to build 28 new ships over the next 30 years for their Navy and Coast Guard.¹¹ In January 2012 to a convention on Arctic governance, Canadian Defense Minister Peter MacKay announced they would build an Arctic Training Centre in Resolute, Nunavut. He stated "As National Defense develops and

¹¹ Conley, Heather, Toland, Terry, and Kraut, Jamie, *A New Security Architecture for the Arctic: An America Perspective*, CSIS: p. 19

refurbishes much of our Northern infrastructure as part of our overall modernization of the Canadian Forces, we are committed to making our defense installations accessible and usable by other government departments."¹²

In comparison, the U.S. doesn't have a sizeable economic-security development plan nor has it committed the resources to modernize capabilities. With territorial claims centered around definitions of internal and international waters along with Economic Exclusive Zones and continental shelf considerations, both policy and enforcement capabilities are critical to safeguarding U.S. security interests.

What is being done

National Security Presidential Directive (NSPD-66) released in 2009 defines the U.S. interests and objectives in the region. The main objectives are missile defense and early warning, deployment of sea and air systems for sealift, strategic deterrence, maritime presence, and maritime security operations, ensuring freedom of navigation and over flight, and preventing terrorist, criminal, or hostile acts that could make the U.S. more vulnerable.¹³ NSPD-66 also drove the Department of Defense to release their own strategic documents. The U.S. Coast Guard and U.S. Navy both highlighted they need the right equipment to increase their presence in the Arctic while the Department of Defense highlighted balancing their fiscal

¹² <http://toronto.ctv.ca/servlet/an/local/CTVNews/20120118/mackay-canadian-arctic-address-120118/20120118?hub=TorontoNewHome>

¹³ <http://www.arctic.gov/news/2009%20Arctic%20Region%20Policy.pdf>

challenges to increasing their presence in the Arctic against competing demands.¹⁴ Although some efforts are underway in planning and budgeting, the overall lack of commitment is prevalent.

The Arctic Council was formed in 1996 as an intergovernmental forum to promote cooperation, coordination, and interaction between the Arctic states; Canada, Russia, Norway, Denmark, Iceland, the United States, Sweden and Finland. Amongst other objectives, the Arctic Council has conducted several studies on climate change, oil and gas, and Arctic shipping. It is also very involved in protection of indigenous populations and environment in the midst of economic development. In May 2011, Secretary of State Hillary Clinton and Secretary of the Interior Ken Salazar attended the Arctic Council meeting in Greenland. This was a major step in U.S. policy and commitment to the region. During this meeting the members signed a treaty dividing maritime search and rescue and discussed protecting habitats despite the increase in oil exploration, fishing, and mining. The Arctic Council has grown to become an exceptional forum for these types of coordination efforts, but lacks any kind of security agreements or demilitarization discussion of the Arctic.

Joint military exercises to demonstrate sovereignty and enhance search and rescue began in 2007 with Canadian-led Operation Nanook. In 2010, both the U.S. and Danish governments were invited to take part for the first time. The three-week, eight-ship exercise was a resounding success and paved the way for future

¹⁴ <http://uscg.mil/history/docs/2008CRSUSCGPolarOps.pdf>;
<http://www.navy.mil/navydata/documents/USN artic roadmap.pdf>;
http://www.defense.gov/pubs/pdfs/Tab_A_Arctic_Report_Public.pdf

joint efforts. Unfortunately the 2012 Operation Nanook was indefinitely postponed due to an aircraft crash in the Northern Territory during the 2011 exercise. Tragically, yet ironically, a commercial airliner, Boeing 737 carrying 12 people crashed near Resolute Bay, Nunavut and forced the Canadian Coast Guard participating in the exercise to respond. The three rescued survivors were attributed to their fast response.¹⁵

The U.S. Coast Guard (USCG) has been building its forces in the region since 2008. USCG District 17 is responsible for protecting the maritime security of the population and environment while safeguarding U.S. national security interests in the region. They have seen an annual 18% increase in ships transiting the Bering Strait, mostly attributed to the increase in ecotourism and cargo movement.¹⁶ On January 15th, 2012, the U.S. Coast Guard icebreaker USS Healy escorted the Russian oil tanker, Renda, through 300 miles of up to 25-foot ice to deliver 1.3 million gallons of fuel to the village of Nome, Alaska.¹⁷ Nome had missed its normal final delivery in November due to a winter storm, so they waited until the ice-going tanker Renda could arrive from South Korea and on load fuel in Dutch Harbor, Alaska. This cooperative effort was a major milestone between the two countries and marks a continued effort to increase the capabilities in the region. This endeavor also marked the use of unmanned drone aircraft to chart the course and survey the ice ahead. A small radio-controlled drone fitted with a camera sent real-

¹⁵ <http://www.cbc.ca/news/canada/north/story/2011/08/20/north-air-crash.html>

¹⁶ <http://www.d17.uscgnews.com/clients/c780/416875.pdf>

¹⁷ <http://www.chicagotribune.com/news/nationworld/ktuu-the-russian-tanker-renda-arrives-at-nomes-shore-20120114,0,3614174.story?track=rss>

time, ice-flow images back the USS Healy. This innovation highlights efforts by the Coast Guard to acquire rotor and fixed wing surveillance drones as part of their \$17 billion “Deepwater” acquisitions program initiated a decade ago.¹⁸ Since situational awareness is a large part of homeland defense, these drones will be invaluable to District 17’s mission.

Joint Task Force Alaska (JTF-AK) is a joint command made up of approximately 80 Soldiers, Sailors, Airmen, Coast Guardsmen and Department of Defense civilians. The task force is a homeland defense component of U.S. Northern Command and was established in 2003. In coordination with other federal, state and local agencies, JTF-AK surveys throughout the state of Alaska for potential vulnerabilities and provides situational awareness to military and civilian leaders to aid in homeland security and planning. “JTF-AK’s mission is to, in coordination with other government agencies, deter, detect, prevent and defeat threats within the Alaska Joint Operations Area (AK JOA) in order to protect U.S. territory, citizens, and interests, and as directed, conduct Civil Support.”¹⁹ Although JTF-AK is responsible for security, it does not have a maritime capability. The maritime capability rests with the sub-unified Alaska Command (ALCOM which falls under U.S. Pacific Command (USPACOM). ALCOM has the responsibility for coordinating military activities in Alaska to include joint training for missions under USPACOM. Through a Command Authorities Agreement between the commanders of USNORTHCOM and USPACOM, ALCOM was also given responsibility to man and execute the JTF-AK mission.

¹⁸ <http://www.globalsecurity.org/org/news/2002/021213-uscg01.htm>

¹⁹ <http://www.northcom.mil/About/index.html#JTFAK>

While the responsibility for defense of Alaska is now divided between NORAD, USPACOM and USNORTHCOM, the Commander ALCOM provides unity of command for U.S. and Canadian forces and all of these missions in Alaska through the designation as Commander JTF-AK.²⁰

What still needs to be done

Although organizations such as the Arctic Counsel address multinational issues pertaining to the governance and preservation of the Arctic, there isn't an organization to focus solely on multilateral security. The North Atlantic Treaty Organization (NATO) seems to be one choice since four of the five Arctic coastal states are members; U.S., Canada, Norway, and Denmark. The obvious nonmember is Russia, however there exists a NATO-Russia Council designed to open dialogue between the states. Consensus on the role of NATO in the Arctic is far from being met. Norway proposed NATO serves as a forum to build situational awareness between allies by sharing surveillance and monitoring, coordinating search and rescue, and protecting territory while Canada sees it as a threat to their sovereignty.

²¹ In a speech to a workshop on Arctic Security, U.S. Admiral James G Stavridis, Supreme Allied Commander for Europe, stated "For now, the disputes in the north have been dealt with peacefully, but climate change could alter the equilibrium over the coming years in the race of temptation for exploitation of more readily

²⁰ <http://www.jber.af.mil/library/factsheets/factsheet.asp?id=5286>

²¹ Norwegian Ministry of Defense, "Capable and Ready for Action—Norway's Armed Forces 2010" (Address by Norwegian Defense Minister Grete Faremo to the Oslo Military Society, January 4, 2010)

accessible natural resources."²² He continued to say military forces have an important role to play in the area, but mainly for specialist assistance around commercial and other interests. The goal for NATO in the Arctic should be as a stabilizing force through presence, joint training, shared information and combined defense acquisition. This is especially important to the U.S. since it lags behind in Arctic prominence. The limiting factor will be Russia's acceptance of an organization originally established to contain them. In November 2011, Russian Foreign Minister Sergei Lavrov declared "Decisions about the conduct of affairs in the Arctic are taken by the Arctic countries, that is, those who are member of the Arctic Council, including Russia and Iceland...any problems should be solved on the basis of UN Convention of the Law of the Sea and the decisions of the Arctic Council. There are no reasons for drawing NATO into Arctic Affairs."²³ The NATO paradigm will be a tough hurdle to overcome for Russia, but vital to U.S. security interests in a changing region.

The consolidation of the Arctic region into one unified command, NORTHCOM, was a pivotal step in focusing efforts. However, there is still overlap and some confusion with PACOM and EUCOM since both still maintain some jurisdiction in the region. PACOM maintains control of several military assets in Alaska, to include 11th Air Force, and EUCOM maintains responsibility for northern states such as Denmark and Norway. Representing their interests in the Integrated

²² "Climate change could lead to Arctic conflict, warns senior NATO commander", <http://www.guardian.co.uk/environment/2010/oct/11/nato-conflict-arctic-resources>

²³ Ministry of Foreign Affairs of the Russian Federation, "Opening Remarks and Answers by Russian Foreign Minister Sergei Lavrov," Moscow, November 29, 2011

Priority List amongst Combatant Commands (COCOM), proposes unique challenges. One solution would be to establish Arctic Command (ARCOM). Much like NORTHCOM was established after the World Trade Center attacks of 9/11 when a security gap was identified, ARCOM could preemptively close the gap in that region before it is exploited. According to a declassified Canadian intelligence report, "In recent years, vessels with links to human smuggling, drug trafficking, and organized crime have attempted to access the Canadian Arctic."²⁴ The article continues that it is only a matter of time before terrorists use the lack of presence and multiple points of entry to access targets in North America. The establishment of ARCOM would allow the U.S. to keenly focus on vulnerabilities and establish countermeasures before they are exploited. In a fiscally constrained Department of Defense environment, this additional regional command would be limited, but could grow as the threat dictates. The real question is whether the same mix of coordination between PACOM, EUCOM, and NORTHCOM would still create confusion with regard to the integrated priority list.

As far back as the Ford administration the U.S. Congress has failed to ratify the United Nations Law of the Sea (UNCLOS). To date 161 countries have signed the treaty and the U.S. has not with reasons ranging from sovereignty to economics. Unfortunately this limits U.S. involvement the International Tribunal for Law of the Seas established to peacefully resolve disputes and establish future agreements. Anti-ratification lawmakers argue the U.S. already recognizes most of the provisions

²⁴ "Arctic Security Threats",
<http://www.cbc.ca/news/canada/north/story/2010/11/10/cp-arctic-security-threats.html>

and does not need the freedom of navigation protection the treaty promises. Because it is not a member, the U.S. may lose control of Arctic development and won't have legal grounds to contest. Secretary of State Clinton supports UNCLOS ratification, "If people start drilling in areas that are now ice free most of the year, and we don't know where they can and can't drill or whether we can, we're going to be disadvantaged."²⁵ Signing UNCLOS gives the U.S. a seat at the table for discussions involving important economic and environmental decisions in the region.

The last recommendation centers on increasing U.S. security capabilities in the region. Capabilities are strengthened through partnerships, frameworks, and resources. Although governance partnerships are well underway through the Arctic Council, security partnerships are undeveloped. The five coastal Arctic states have yet to establish a unified framework to increase presence, surveillance, and exercise capabilities. The Canadians have proposed a Northwest Passage Authority with the U.S. to monitor and control the ship movement through the passage.²⁶ Movement through choke points like the Suez and Panama canals is easy to monitor, but less accessible routes like the NWP need joint efforts to police effectively. Unfortunately these efforts are deadlocked because of differences of opinion on the NWP freedom

²⁵ "Arctic Challenges May Prompt US to Ratify UNCLOS," Ben Block, <http://unlawofthesea.wordpress.com/2009/01/20/obama-administration-supports-law-of-the-sea-treaty-by-ben-block/>

²⁶ "CANADA-U.S. RELATIONS IN THE ARCTIC: A NEIGHBOURLY PROPOSAL," <http://www.cdfai.org/PDF/Canada-U.S.%20Relations%20in%20the%20Arctic%20%20A%20Neighbourly%20Proposal.pdf>

of navigation between the two states. Once the treaty is negotiated, efforts to establish organizations and resources to monitor ship movements can commence.

A combined task force between the U.S. and Canada may be the right organization to establish collective Arctic security to North America. Since the two states are already linked in the North American Aerospace Defense Command (NORAD), establishment of a subordinate combined task force in the region could give it the central command center it needs to maximize coordination efforts. On January 24th, 2012, Army Gen. Charles Jacoby, Jr., Commander of NORAD and Lt.-Gen. Walter Semianiw, Canada Command Commander, signed the Combined Defense Plan in Ottawa.²⁷ The Arctic was highlighted as an area of regional engagement that needs attention. The time is right to stand up the task force and begin work on a shared vision.

Regardless of shared assets, certain U.S. resources are lacking or woefully outdated. The North Warning System provides early detection of airborne threats transiting the northern polar airspace. In November 2011, Lockheed Martin was awarded a \$46 million contract to update the equipment originally installed in the 1980s. Unfortunately the contract is only to update airborne radar out to 250 miles and lacks any capability to provide sea surveillance.²⁸ Canada, however, is also developing High Frequency Surface Wave Radars for Arctic surveillance. The land-based system uses ocean's saltwater as a conducting surface to detect ships at long

²⁷ "NORAD, USNORTHCOM commander endorses bilateral agreements with Canada," <http://www.defpro.com/news/details/31691/>

²⁸ "Lockheed Martin awarded contract by US Air Force to modernize early warning long-range surveillance radars" <http://www.militaryaerospace.com/articles/2011/11/lockheed-martin-awarded.html>

distances.²⁹ These sensors combined with rapidly deployable sonar systems and satellites can provide an overlapping network of detection for both surface and submersible vessels. Raytheon is also working on a system called the Raytheon Arctic Monitoring Prediction (RAMP) and it tested it on the U.S. Navy Destroyer Porter during the 2010 Operation Nanook. RAMP gathers and processes sensor data to monitor retreating ice. The idea is if we know where the ice isn't, they know where to look for ships.³⁰ The progress towards fielding these systems is only restrained by funding.

Satellite coverage is also a challenge in the Arctic. All sensors need communications to relay their information to command and control centers, but options are limited over the Arctic because communications satellites are located near the equator and focused to maximize coverage over populated areas. This makes coverage above 70 degrees north limited. Two possible solutions are to launch an array of communications satellites in an elliptical orbit passing over the poles or build ground-based antennae tall enough to communicate with geostationary satellites. Both options are viable, but expensive. Additionally, Canada fielded two satellites called RADARSAT-2 that provides cloud-free imaging and ship-tracking in the region. In August 2010, the Canadian government committed to investing \$374 million in the next generation of this technology. "The RADARSAT project has consistently allowed us to defend our Arctic sovereignty,

²⁹ "Commanding the Arctic,"
<http://www.defensenews.com/article/20110301/C4ISR02/103010308/Commanding-the-Arctic>

³⁰ "Commanding the Arctic,"
<http://www.defensenews.com/article/20110301/C4ISR02/103010308/Commanding-the-Arctic>

protect the Arctic ecosystem and develop our resources," stated Canadian Prime Minister Stephen Harper.³¹ Luckily through bilateral agreements centered on NORAD memorandums of agreement, some RADARSAT data is shared with the U.S. However, since the U.S. hasn't made significant investments in the system, the data is limited according to the U.S. National Oceanic and Atmospheric Administration: "RADARSAT data is limited to a percentage of the U.S. Government's investment in the RADARSAT program. As such, Comprehensive Large Array-data Stewardship System (CLASS) receives only limited amounts of RADARSAT data. These data include those acquired by the U.S. National Ice Center (NIC) for operational sea ice analysis and charting."³² Larger investments would benefit the U.S. in more comprehensive security data and stronger ties with Canada.

The last significant resource the U.S. is lacking is in the recapitalization and acquisition of icebreakers. Access and presence is essential for security in the region. The U.S. Navy has access limited to the Arctic through subsurface vessels and the U.S. Coast Guard has three icebreakers. The U.S.S. Healy is the Coast Guard's only operational polar icebreaker, but it has two more. The Polar Sea was refurbished in 2006, but crippled by engine failure in 2010. The refurbished Polar Star is to return to service in 2013 and is estimated for another ten years of service life. As of February 2012, a legislative debate over how large the nation's icebreaker fleet should be has ensued. The Coast Guard wants to place the Polar Sea in

³¹ "Canadian Radarsat Constellation To Get \$374 Million Cash Infusion," http://www.spacenews.com/earth_observation/082610canadian-leader-endorses-radarsat-constellation.html

³² http://www.class.ngdc.noaa.gov/data_available/sar/index.htm

caretaker status and scavenge its parts for the Polar Star. In Congress, House Republicans want to permanently mothball the Polar Sea this year, and to decommission the Polar Star in three years.³³ Stemming from a lack of strategy agreement in the Arctic, a commitment to acquire icebreakers has not been agreed upon or resourced. Unfortunately, these ships take years to build and everyday the U.S. falls further behind the other Arctic states. Currently the Russians have a reported 20 icebreakers, of which nine are nuclear powered. Nuclear-powered icebreakers only need to refuel every four years, which aptly reduces resupply needs in the Arctic's austere and harsh environment. In July 2011, Russia committed to building six new icebreakers of which three are nuclear powered. Russian Deputy Prime Minister Sergei Ivanov believes cargo through the Northern Sea Route could reach five million tons in 2012 and the new fleet will be in demand well into the future.³⁴ In a fiscally constrained U.S. environment, spending more money on security assets will be difficult. But as Alaskan Lieutenant Governor Mead Treadwell stated, "A couple of icebreakers at \$750 million or so a piece can actually open up a major sea route for global commerce."³⁵ In other words, this would be money well spent for both security and commerce.

³³ "Coast Guard ice-cutter returns home after 254-day deployment," http://seattletimes.nwsource.com/html/localnews/2017434937_healy06m.html?syndication=rss

³⁴ "Russia orders six new icebreakers," <http://www.barentsobserver.com/russia-orders-six-new-icebreakers.4940947-116320.html>

³⁵ "Weatherwatch: Trade traffic in Arctic waterways is increasing," <http://www.guardian.co.uk/news/2012/jan/11/weatherwatch-arctic-icebreakers-trade>

Conclusions

The time to start shaping the U.S. Arctic security interests is now. The Arctic offers both commercial opportunity and security if it is effectively implemented into national policy objectives and strategy.

The U.S. can be certain Russia, Canada, and Norway are actively engaged in preparing for this new commerce, resource and security frontier. With 90 billion barrels of oil throughout 400 oil fields, the region is destined to be bustling with exploration in the next 20 years. Critical waterways that shorten the commerce routes between the east and west also suggest the time to expand and create new infrastructure is now. The hazards of waiting too long to fully engage could mean the U.S. loses the opportunity to shape the security, commerce, and environment for the future. It could also mean a must greater investment to achieve its objectives later.

Arctic Council policy and governance discussions as well as joint military training exercises are a step in the right direction. U.S. Coast Guard District 17 has increased its presence as much as possible with limited resources and Joint Task Force Alaska established a command and control center to process information for decision makers. Although these are steps in the right direction, more is needed.

Involving NATO would provide the presence, shared information, joint training, and combined resource acquisition needed to create a stable and secure environment in the ensuing rush. Establishment of U.S. Arctic Command could also be the foundation of U.S. security needs well into the future. Instead of waiting until the security gap is exploited, like the U.S. did with NORTHCOM, lawmakers should

take those bold steps now. The U.S. ratification of the United Nation's Law of the Seas is also well past due. To ensure access to shaping discussions and avoid missing opportunities, the U.S. needs to resolve internal differences and move towards ratification before it is too late. Lastly, U.S. capabilities in the region are lacking. Infrastructure, surveillance radars, satellite coverage, and icebreakers need to be placed high enough on the Integrated Priority List to receive funding now and establish a dominant force well into the future.

The Arctic is a prime opportunity for the U.S. to play a role in shaping one of the last frontiers. It requires vision and perspective to grasp what the future holds in the region, but unquestionably U.S. national security depends on actions taken now.